



Kevin Scott  
Project Manager

February 6, 2012  
Mr. Eric Daly  
On-Scene Coordinator  
U.S. Environmental Protection Agency Region 2  
2890 Woodbridge Avenue  
Edison, NJ 08837

**Subject: Draft Sampling Trip Report for the Riverside Avenue Site  
Newark, Essex County, New Jersey  
Contract: EPA Region 7 START, Region 2 Crossover  
Contract No. EP-S7-06-01  
Task No. 9004L100178000**

Dear Mr. Daly:

Tetra Tech EM Inc. (Tetra Tech) is submitting the draft sampling trip report for the Riverside Avenue site located at Riverside Avenue in Newark, New Jersey. The trip report summarizes the test pit sampling activities conducted at the site from January 25 through January 27, 2012. If you have any questions regarding this report, please contact me at (302) 283-2248 or [kevin.scott@tetrattech.com](mailto:kevin.scott@tetrattech.com).

Sincerely,

A handwritten signature in black ink that reads 'K Scott'.

Kevin Scott  
Project Manager

Enclosure  
cc: TDD File

**DRAFT SAMPLING TRIP REPORT  
RIVERSIDE AVENUE SITE  
NEWARK, ESSEX COUNTY, NEW JERSEY**

*Prepared for*

**U.S. Environmental Protection Agency Region 2**  
Emergency and Remedial Response Division  
2890 Woodbridge Avenue  
Edison, New Jersey 08837

*Prepared by*

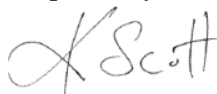
**Tetra Tech EM Inc.**  
240 Continental Drive, Suite 200  
Newark, Delaware 19713

EPA Contract No. EP-S7-06-01

Task No. 9004L100178000

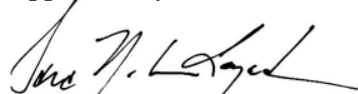
February 6, 2012

Prepared by



Kevin Scott  
Project Manager

Approved by



Sara Nielsen Legard  
Quality Assurance Manager

## CONTENTS

<b><u>Section</u></b>	<b><u>Page</u></b>
1.0 INTRODUCTION .....	1
2.0 BACKGROUND .....	1
2.1 SITE LOCATION AND LAYOUT .....	1
2.2 SITE DESCRIPTION.....	2
2.3 SITE HISTORY .....	2
2.4 PREVIOUS SITE INVESTIGATIONS .....	2
3.0 SITE ACTIVITIES .....	5
3.1 SAMPLING ACTIVITIES.....	5
3.2 SOIL SAMPLING.....	6
3.3 SAMPLE HANDLING .....	6
3.4 IDW AND QUIPMENT DECONTAMINATION.....	7
4.0 OBSERVATIONS AND CONCLUSIONS.....	7
REFERENCES .....	8

## **Appendices**

A	FIGURES
B	TABLES
C	PHOTOGRAPHIC DOCUMENTATION LOG
D	FIELD LOGBOOK NOTES
E	CHAIN-OF-CUSTODY RECORDS

## **1.0 INTRODUCTION**

Under Region 7 Superfund Technical Assessment and Response Team (START) Contract No. EP-S7-06-01, Task No. 9004L100178000, U.S. Environmental Protection Agency (EPA) Region 2 tasked Tetra Tech EM Inc. (Tetra Tech) to conduct a removal assessment at the Riverside Avenue site, located in Newark, Essex County, New Jersey. Results from this investigation will be used to determine the nature and extent of soil contamination in the vicinity of the underground storage tank (UST) farm at the site. All sampling was completed in accordance with the site-specific abbreviated sampling and analysis plan (SAP) and quality assurance project plan (QAPP) prepared for the site (Tetra Tech 2012a, 2012b)

Information collected during this investigation will be used to determine if hazardous substances that might pose a significant risk to public health or the environment are present at the site and if remediation is warranted under the Comprehensive Environmental Response, Compensation, and Liability Act of 1980 (CERCLA), and the Superfund Amendments and Reauthorization Act of 1986 (SARA).

This trip report provides site background information in Section 2.0, describes sampling activities in Section 3.0, and summarizes observations and conclusions from the investigation in Section 4.0. All references cited in this trip report are listed after the text. The appendices include figures illustrating the site and test pit locations associated with this investigation in Appendix A; tables in Appendix B; photographic documentation of site activities in Appendix C; and field logbook notes, and chain-of-custody records in Appendix D and E, respectively.

## **2.0 BACKGROUND**

This section describes the site location and layout, presents a site description, discusses the site's history, and summarizes previous investigation activities conducted on and in the vicinity of the Riverside Avenue site.

### **2.1 SITE LOCATION AND LAYOUT**

The Riverside Avenue site is located off of McCarter Highway (New Jersey Route 21) on Riverside Avenue in Newark, New Jersey, as shown on Figure 1, Site Location Map, in Appendix A. The site is identified in the Comprehensive Environmental Response, Compensation, and Liability Information System (CERCLIS) as being located at 29 Riverside Avenue. The geographic coordinates for the approximate center of the site are 40° 45' 56.52" north latitude and 74° 9' 32.7594" west longitude. The area being investigated covers approximately 1/10 of 1 acre (5,000 square feet) on Lot 64 (Block 614) where 10 underground tanks are buried as shown on Figure 2, Site Layout Map, in Appendix A. Lot 64 is owned by the

City of Newark, New Jersey. The area of investigation is bordered by commercial properties to the north, by the Passaic River to the east, by commercial properties to the south, and by the Norfolk Southern Railroad, McCarter Highway (New Jersey Route 21), and Riverside Avenue to the west. Access to the site is through Riverside Avenue.

## **2.2 SITE DESCRIPTION**

The Riverside Avenue site is a former PPG paint manufacturing facility located in an industrial area of Newark, New Jersey. Two buildings located on the property have been investigated: Buildings 7 and 12. Building 7 is a three-story building that contains approximately one hundred 3,000 to 10,000-gallon aboveground storage tanks (AST) and two subsurface impoundments (sub-basements), and Building 12 is a five-story building containing two abandoned 10,000-gallon ASTs containing hazardous waste. Previous field investigations have confirmed the presence of ten 12,000-gallon underground storage tanks (UST) containing hazardous substances, primarily volatile organic compounds (VOC), buried in the central portion of the site (Lockheed Martin 2010a). The area surrounding the ten 12,000-gallon USTs is the focus of this removal assessment. Figure 2, Site Layout Map, in Appendix A shows the locations of Buildings 7 and 12, and the 12,000-gallon USTs in the center of the site.

Site soil is composed of fill material that was used to create land adjacent to the Passaic River (U.S. Geological Survey [USGS] 1955).

## **2.3 SITE HISTORY**

Based on existing Sanborn Fire Insurance maps, the site has been used for industrial activities from 1909 through 1983. Various operators used the property for the manufacture of paints and varnishes. From 1931 to 1950, PPG conducted operations on approximately 7 acres along the western shore of the Passaic River. From approximately 1950 through 1973, the size of the operations decreased. Various tenants have occupied the property from 1973 through 1993. In 1993, the City of Newark obtained portions of the site through foreclosure (Weston Solutions, Inc. [Weston] 2009; Sanborn Maps 1909, 1931, and 1950).

## **2.4 PREVIOUS SITE INVESTIGATIONS**

In May 2009, Weston completed a preliminary assessment (PA) for the City of Newark as part of the New Jersey Department of Environmental Protection (NJDEP) remediation program. During the PA, Weston investigated Buildings 7 and 12 located in the central portion of the Riverside Avenue site, and the property surrounding the buildings. While conducting the PA, Weston identified several areas of concern (AOC) based on Sanborn maps. The AOCs included ASTs, USTs, and underground piping (Weston 2009). In August and October 2009, Birdsall Services

Group Inc./PMK Group, Inc. (Birdsall) completed a site inspection (SI) at the site to investigate possible contamination from the AOCs. Birdsall also has a geophysical survey completed for the site. The survey identified possible USTs located east of Building 12. Subsequently, 10 USTs were confirmed to be present at this location (Birdsall 2009).

During the SI, A total of 17 soil borings were installed and 23 soils samples were collected. The soil samples were analyzed for total petroleum hydrocarbons (TPH) and priority pollutants. Analytical results from soil samples collected from areas surrounding the identified AOCs contained TPH in every sample; VOCs benzene, toluene, and ethylbenzene in about 12 samples; several semivolatile organic compounds (SVOC) in every sample; lead in every sample; and polychlorinated biphenyls (PCB) in seven samples. SVOC and lead contamination are present in soil throughout the area sampled.

EPA Region 2 requested the EPA Environmental Response Team (ERT) conduct a subsurface investigation of a portion at the Riverside Avenue site. On May 26 and 27, 2010, ERT collected 24 subsurface soil samples from 12 soil borings, 12 groundwater samples from the soil boring locations, and six sediment samples from the Passaic River adjacent to 29 Riverside Avenue (Lockheed Martin 2010a).

The analytical results from the 2010 subsurface investigation identified SVOCs in the 24 soil and six sediment samples collected from the site and the Passaic River, respectively. The most prevalent SVOCs detected in soil include benzo(a)anthracene (up to 4.9 milligrams per kilogram [mg/kg]), benzo(b)fluoranthene (up to 3.3 mg/kg), benzo(k)fluoranthene (up to 4.5 mg/kg), benzo(a)pyrene (up to 4.1 mg/kg), and indeno(1,2,3-cd)pyrene (up to 1.9 mg/kg). Lead was detected in 19 of the 24 soil samples at concentrations up to 4,700 mg/kg. Benzene was detected in two soil samples at concentrations up to 2.9 mg/kg. The sediment samples contained the same SVOCs detected in the soil samples including benzo(a)anthracene (up to 5.2 mg/kg), benzo(b)fluoranthene (up to 4.3 mg/kg), benzo(k)fluoranthene (up to 2.1 mg/kg), benzo(a)pyrene (up to 4.6 mg/kg), and indeno(1,2,3-cd)pyrene (up to 1.8 mg/kg). Lead also was detected in all sediment samples, with a maximum concentration of 21,000 mg/kg (Lockheed Martin 2010a).

Groundwater samples collected during the 2010 subsurface investigation contained notable concentrations of lead in nine of the 12 groundwater samples collected from the soil borings on site, with a maximum concentration of 16 micrograms per liter (µg/L). Other contaminants found in the groundwater samples included benzene (up to 16 µg/L); m,p,o-xylene (up to 1,400 µg/L); methylene chloride (up to 110 µg/L); naphthalene (up to 6.1 µg/L); and 2-methylnaphthalene (8.8 µg/L) (Lockheed Martin 2010a).

In October 2009, NJDEP responded to a spill into the Passaic River from two tanks in the basement of Building 12 on the Riverside Avenue site. The spilled material was characterized as waste solvent and fuel (NJDEP 2009). In response to the spill and the presence of contamination identified during the May 2010 SI, the EPA removal program began removal actions at the site. The actions included surface and subsurface soil sampling, groundwater sampling, and waste characterization (Lockheed Martin 2010b).

Under EPA Region 7 START Contract No. EP-S7-06-01, Technical Direction Document (TDD) No. 0178, EPA Region 2 tasked Tetra Tech to conduct a site removal assessment at the Riverside Avenue site in June 2010. Tetra Tech completed the following tasks during this removal assessment:

- Inventoried and collected liquid and/or residual solid samples from tanks located on the second and third floors of Building 7
- Collected aqueous and sediment samples from the basements of Buildings 7 and 12 where pooled water has accumulated
- Inventoried and sampled drums and containers located on site
- Collected samples of red and blue-colored dry pigment materials located on the floor of Building 12
- Collected samples of the tar/resin-like materials leaching from the west bank of the Passaic River and observed along the base of the north wall of Building 7
- Packaged and shipped samples to laboratories procured through the EPA Contract Laboratory Program (CLP) for target compound list (TCL) and toxicity characteristics leaching procedure (TCLP) VOCs, SVOCs, pesticides, and PCBs and TAL and TCLP metals and cyanide (Tetra Tech 2010)

The sub-basement sediment samples contained acetone up to 11,000 micrograms per kilogram ( $\mu\text{g/kg}$ ); chloroform up to 2,200  $\mu\text{g/kg}$ ; 1,3-dichlorobenzene up to 290,000  $\mu\text{g/kg}$ ; methylene chloride up to 220,000  $\mu\text{g/kg}$ ; tetrachloroethene up to 280,000  $\mu\text{g/kg}$ ; 1,1,1-trichloroethane up to 1,100,000  $\mu\text{g/kg}$ ; and 2-methylphenol up to 4,700,000  $\mu\text{g/kg}$ . The tank wastes contained acetone up to 1,100  $\mu\text{g/kg}$ , methylene chloride up to 560  $\mu\text{g/kg}$ , and xylene up to 630  $\mu\text{g/kg}$ . Resin from the pipes contained ethylbenzene up to 150,000  $\mu\text{g/kg}$ , isopropylbenzene up to 7,700  $\mu\text{g/kg}$ , and m,p-xylene up to 65,000  $\mu\text{g/kg}$ . Samples were collected from pigments found in containers and on the floor. The pigments contained acetone up to 710  $\mu\text{g/kg}$ , methylene chloride up to 300  $\mu\text{g/kg}$ , toluene up to 4,300  $\mu\text{g/kg}$ , and lead up to 143 mg/kg (Tetra Tech 2010).

Previous investigations of the Riverside Avenue site have only been conducted in the central portion of the site near Buildings 7 and 12. However, PPG operations were located north and

south of the central portion of the site. No samples have been previously collected from the northern and southern portions of the former PPG operational areas. In November and December 2011, EPA START Region 7 contractor Tetra Tech collected surface soil, subsurface soil, and groundwater samples from the northern and southern portions of the site to identify possible contamination from releases from former operational areas such as storage tanks located on the northern and southern portions of the site. The sampling activities from this investigation were described in a drafted trip report prepared by Tetra Tech and submitted to EPA on December 21, 2011. Tetra Tech and EPA are currently reviewing and evaluating the sample analytical results for this sampling event.

### **3.0 SITE ACTIVITIES**

On Tuesday, January 24, 2012, Tetra Tech employee Kevin Scott traveled to the Riverside Avenue site and met with U.S. EPA On-Scene Coordinator Eric Daly and the foreman for the EPA's Emergency and Rapid Response Service (ERRS) contractor to discuss the approach for the removal assessment and determine the locations for the six proposed test trenches (test pits). Test pit excavation was performed by the ERRS contractor and test pit soil sample collection was performed by Tetra Tech. Test pits TP1, TP2, and TP3 were excavated and sampled on January 25, 2012. Test pit TP4 was excavated and sampled on January 26 and TP5 was partially excavated on January 26, but was not completed on this date because an 8 inch diameter water main was broken during the excavation of this test pit. Tetra Tech collected two of the three samples proposed for test pit TP5 on January 26. Test pit TP6 was excavated and sampled on January 27, 2012 as was the completion of the excavation and sampling of test pit TP5.

Figure 3, Test Pit Location Map, in Appendix A shows the locations of the six test pits excavated along the perimeter of the UST farm. Test pits were identified as TP1 through TP6. Two test pits were excavated on each of the north and south sides of the UST perimeter and one test pit was excavated on each of the east and west sides. Table 1 in Appendix B is a summary of the samples collected from the six test pits, including the date and time of each sample collected; the test pit number and sample depth; the analytical parameter and method, and laboratory, chain-of-custody record number and air bill number.

This section discusses sampling activities, sampling handling, equipment decontamination, and investigation-derived waste (IDW) and equipment decontamination procedures conducted as part of the January 2012 sampling event.

#### **3.1 SAMPLING ACTIVITIES**

Figure 4 in Appendix A shows the sampling locations and depths. Tetra Tech obtained geographic coordinates for each of the sampling locations using Google Earth. The coordinates

are included in sample summary Table 2 Appendix B. A photographic documentation log of the investigation is provided in Appendix C. Copies of the logbook notes are provided in Appendix D. Logbook notes were recorded in accordance with Tetra Tech SOP No. 024, “Recording of Notes in Field Logbook” (Tetra Tech 2008b). Copies of chain-of-custody records from the sampling event are provided in Appendix E.

This section describes the sampling activities and summarizes the sample collection methods, samples collected, and locations for the samples collected as part of this investigation.

### **3.2 SOIL SAMPLING**

Tetra Tech collected a total of 20 soil samples (including two duplicate samples) from six test pits excavated by the EPA ERRS contractor around the perimeter of the UST farm as shown on Figure 3, Sampling Location Map, in Appendix A. Samples were collected at three depth intervals in each test pit - 4 feet below ground surface (bgs), 8 feet bgs, and 10 feet bgs. An ERRS laborer determined the depth of the excavation by dropping the end of a weighted tape measure into the excavation. When the desired depth interval was reached, the ERRS operator scooped dirt into the excavator bucket and then lifted it out of the excavation and positioned the bucket in a manner to facilitate sample collection by the START contractor. This procedure was repeated for each depth interval in each of the six test pits. Table 1 in Appendix B provides a summary of the surface soil samples collected from the Riverside Avenue site.

Soil samples were collected in accordance with Tetra Tech SOP No. 005, “Soil Sampling” (Tetra Tech 2009c). Tetra Tech collected soil directly into Encore samplers for VOC analysis. Additional sample volume was collected and homogenized, and then transferred with a dedicated plastic scoop into certified-clean bottleware for analyses for SVOCs, pesticides, aroclors, herbicides, metals, cyanide, and moisture. In four of the six test trenches, additional sample was also collected at the 8 foot depth for five soil samples, including one duplicate sample) for analysis for dioxins and furans. All soil samples were screened with a photoionization detector (PID) to evaluate the presence of VOCs. Table 3 in Appendix B provides a summary of the PID readings measured during the excavations of test pits TP1 through TP5. Due to inclement weather on January 27, 2012, the PID was not used during the excavation of test pit TP6.

### **3.3 SAMPLE HANDLING**

Sample handling, packaging, and shipment procedures were performed in accordance with Tetra Tech SOP No. 019, “Packaging and Shipping Samples” (Tetra Tech 2008a). With the exception of soil samples that were shipped to Lancaster Laboratories, a Tetra Tech subcontracted laboratory, all samples were shipped to EPA-approved CLP laboratories. All sampling data, including sampling times, dates, locations, types, and sampler, were recorded on Scribe chain-of-

custody/traffic reports and in the site logbook; copies are provided in Appendix D and Appendix E, respectively.

### **3.4 IDW AND EQUIPMENT DECONTAMINATION**

Dedicated sampling equipment and personal protective equipment (PPE) were double-bagged and disposed of with other waste produced at the site. All investigation-derived waste (IDW) was double-bagged and disposed of as dry, industrial waste.

## **4.0 OBSERVATIONS AND CONCLUSIONS**

Dark, oil-stained fill material was encountered at all test pit locations and a strong petroleum odor was detected during the excavation of each test pit. A visible oily sheen was observed on the surface of pooled groundwater that accumulated in the bottom of each excavation. The water table was measured at a depth of approximately 6 feet bgs. A clay layer was determined to be present at approximately 11' bgs. All soil samples collected from the site did have notable visible contamination and notable petroleum odors. A pesticide odor was detected during the excavation of Test pit TP5.

Elevated PID readings were recorded in the test pits. The maximum PID reading in test pits TP1 through TP5 were 146 ppm, 190.5 ppm, 192.5 ppm, 153.5 ppm and 200.7, respectively.

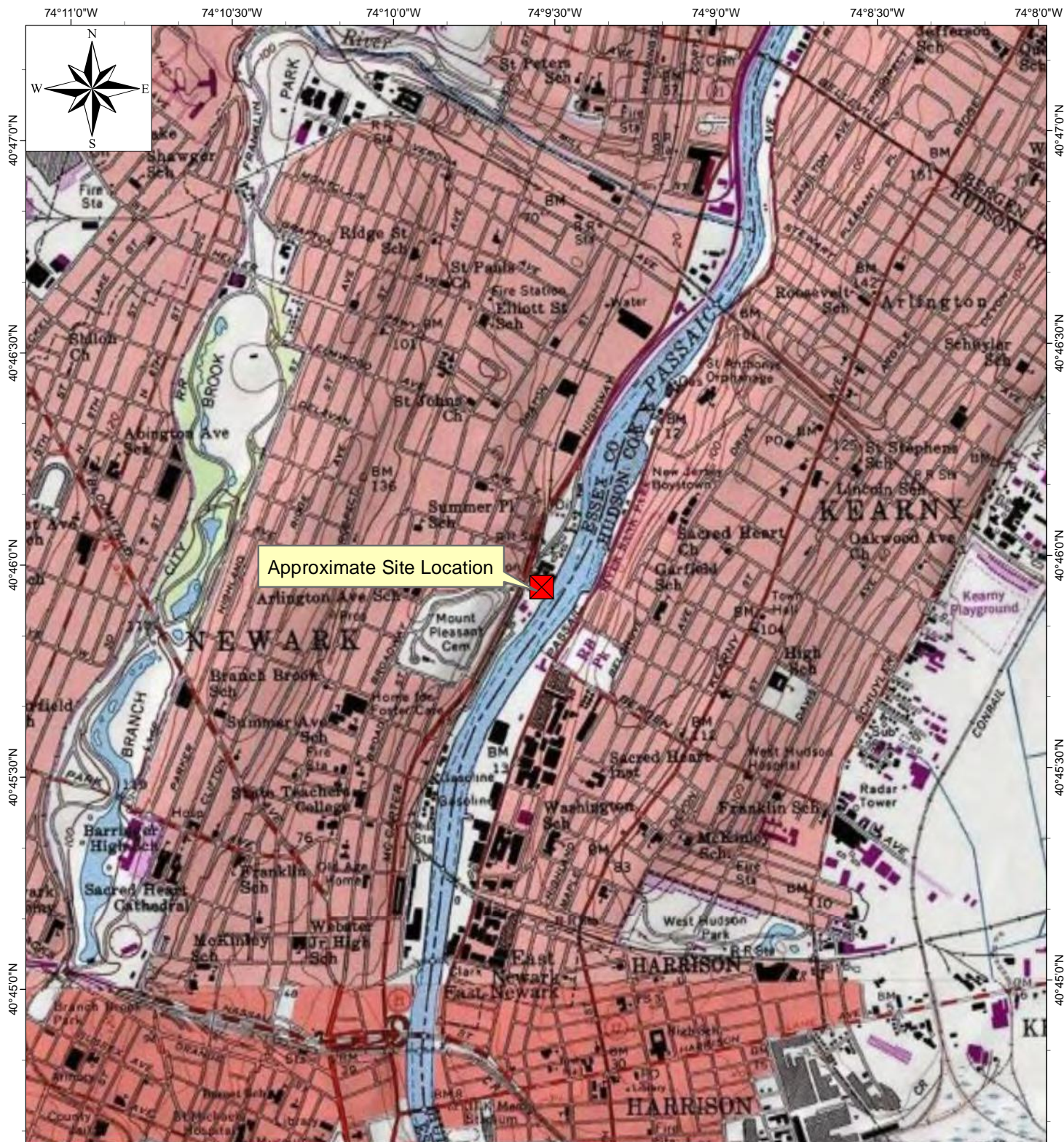
## REFERENCES

- Birdsall Services Group Inc./PMK Group, Inc. (Birdsall). 2009. Draft Site Inspection Report. Volume I. October 16.
- Lockheed Martin. 2010a. Memorandum Regarding Trip Report 29 Riverside Site. From Martin Ebel, Scientific, Engineering, Response, and Analytical Services (SERAS) Task Leader. To Don Bussey, U.S. Environmental Protection Agency (EPA)/Environmental Response Team (ERT) Work Assignment Manager. November 9.
- Lockheed Martin. 2010b. Memorandum Regarding Underground Storage Tank and Environmental Samples Report 29 Riverside Site. From Martin Ebel, SERAS Task Leader. To Don Bussey, EPA/ERT Work Assignment Manager. November 17.
- New Jersey Department of Environmental Protection (NJDEP). 2009. Bureau of Emergency Response. Emergency Authorization Request. November 17.
- Sanborn Library. Sanborn Maps for 1700-1702, 1702-1716 McCarter, Newark, New Jersey including years 1909, 1931, and 1950.
- Tetra Tech. 2008a. "Packaging and Shipping Samples." SOP No. 019. Revision No. 6. December.
- Tetra Tech. 2008b. "Recording of Notes in Field Logbook." SOP No. 024. Revision No. 1. December. Created on May 18, 1993.
- Tetra Tech. 2009a. "General Equipment Decontamination." SOP No. 002. Revision No. 3. June. Created on February 2, 1993.
- Tetra Tech. 2009c. "Soil Sampling." SOP No. 005. Revision No. 2. June.
- Tetra Tech. 2010. Revised Draft Trip Report for Riverside Avenue, Newark, New Jersey. September 3.
- Tetra Tech. 2012a. Draft Abbreviated Sampling and Analysis Plan for Riverside Avenue, Newark, New Jersey. January 25.
- Tetra Tech. 2012b. Quality Assurance Project Plan (QAPP) for Riverside Avenue. January 24.
- U.S. Geological Survey (USGS). 1955. 7.5-Minute Series Topographic Map of Orange, New Jersey, Quadrangle. Photorevised 1981.
- USGS. 1967. 7.5-Minute Series Topographic Map of Elizabeth, New Jersey, Quadrangle. Photorevised 1981.
- Weston Solutions, Inc. (Weston). 2009. Preliminary Assessment Report. 1700-1712 and 1702 -1716 MC Carter Highway, Newark, New Jersey. May.

## **APPENDIX A**

### **FIGURES**

- |          |                                     |
|----------|-------------------------------------|
| <b>1</b> | <b>Site Location</b>                |
| <b>2</b> | <b>Site Layout Map</b>              |
| <b>3</b> | <b>Test Pit Location Map</b>        |
| <b>4</b> | <b>Test Pit Sample Location Map</b> |



Quadrangle Location = ■



New Jersey

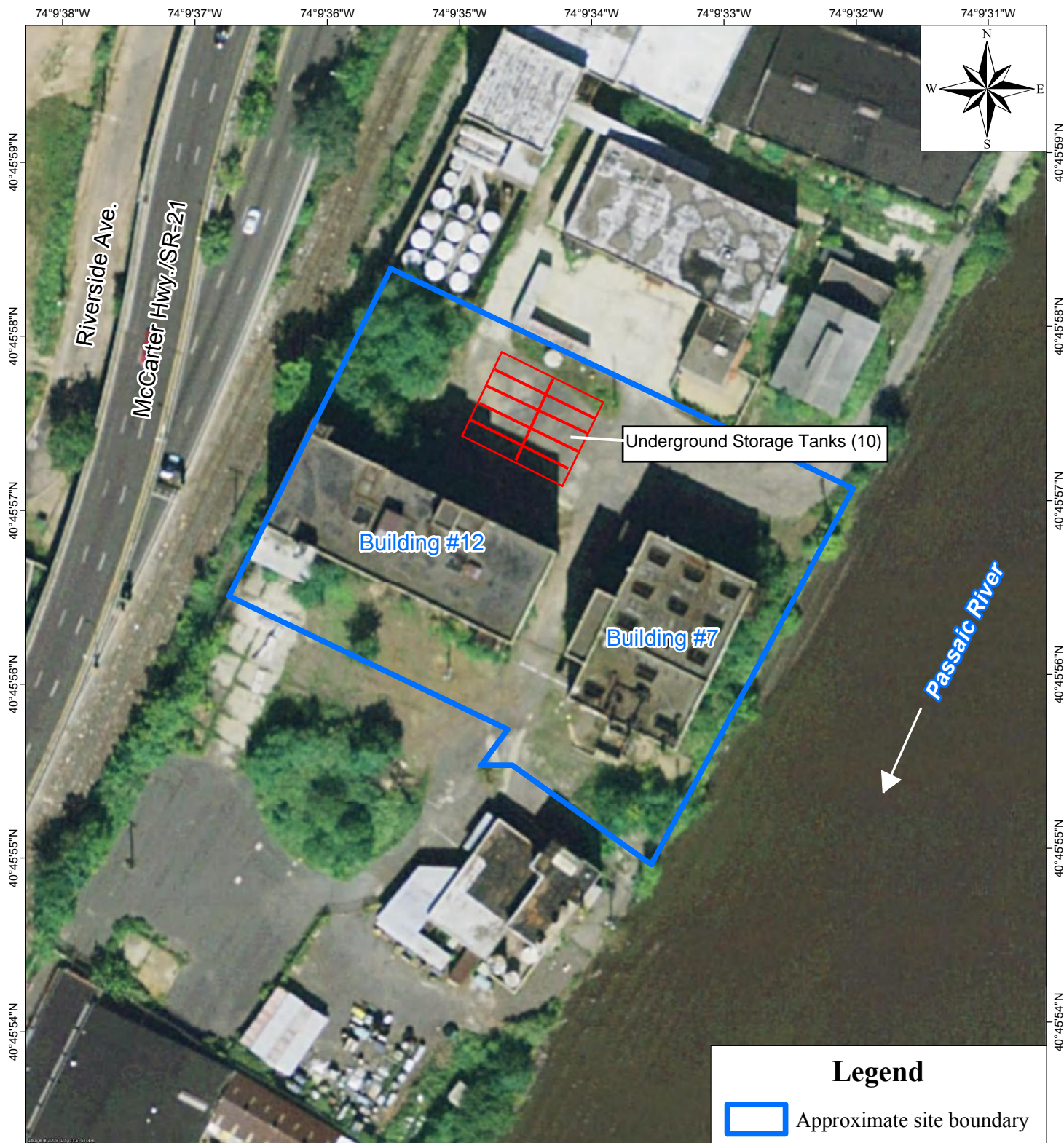
Riverside Avenue  
Newark, Essex County, New Jersey

**Figure 1**  
Site Location Map

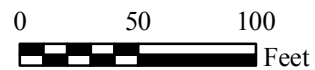
Project number 9004L9004L100178000  
EPA Contract No. EP-S7-06-01



**TETRA TECH**



Source: Modified from DigitalGlobe aerial photography, September 19, 2009.



Approximate Site Location = 



New Jersey

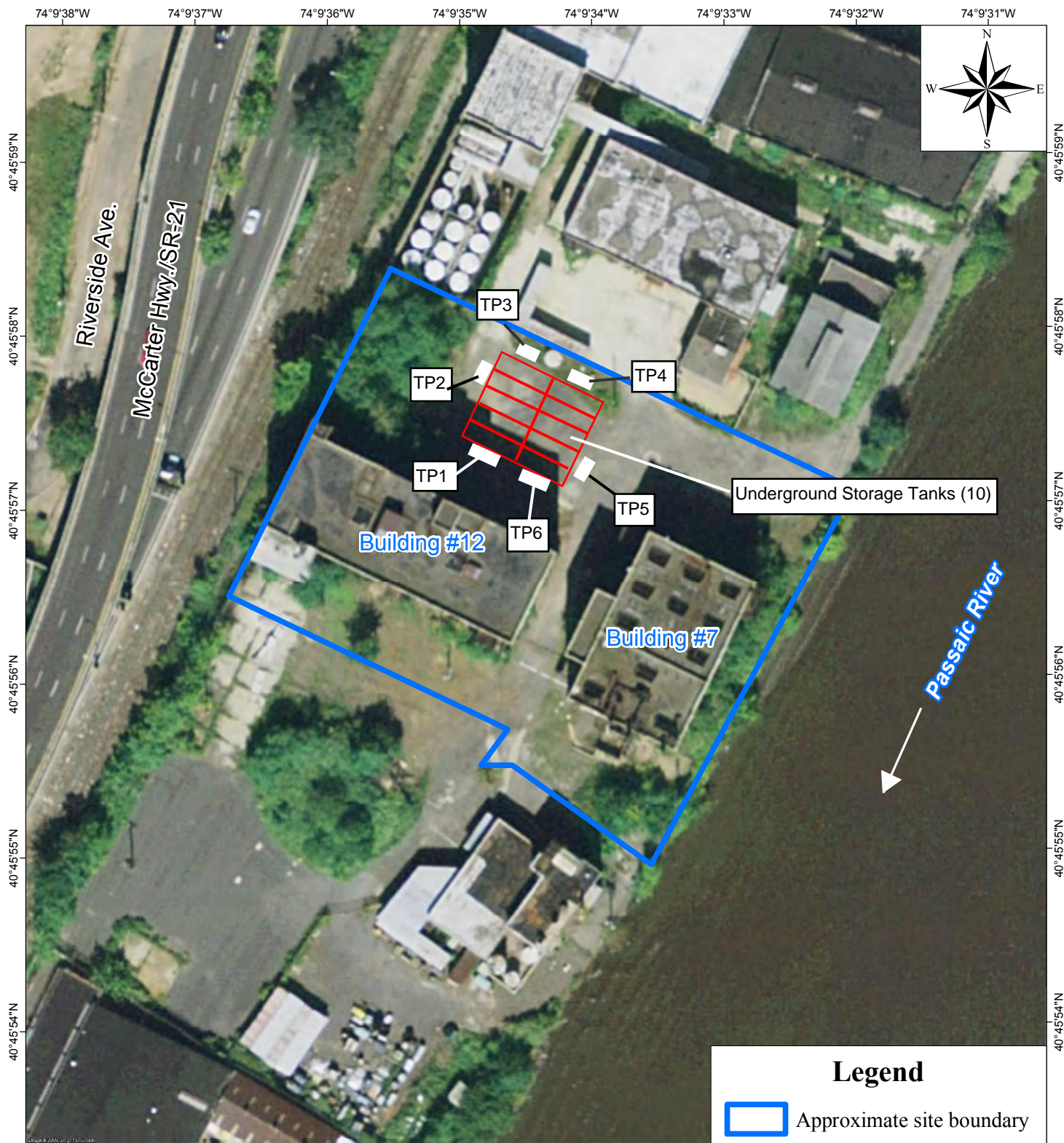
29 Riverside Avenue  
Newark, Essex County, New Jersey

**Figure 2**  
Site Layout Map

Project number 9004L100178  
EPA Contract No. EP-S7-06-01

Map created on June 25, 2010  
by D. Call, Tetra Tech EM Inc.





Approximate Site Location = ■



New Jersey

29 Riverside Avenue  
Newark, Essex County, New Jersey

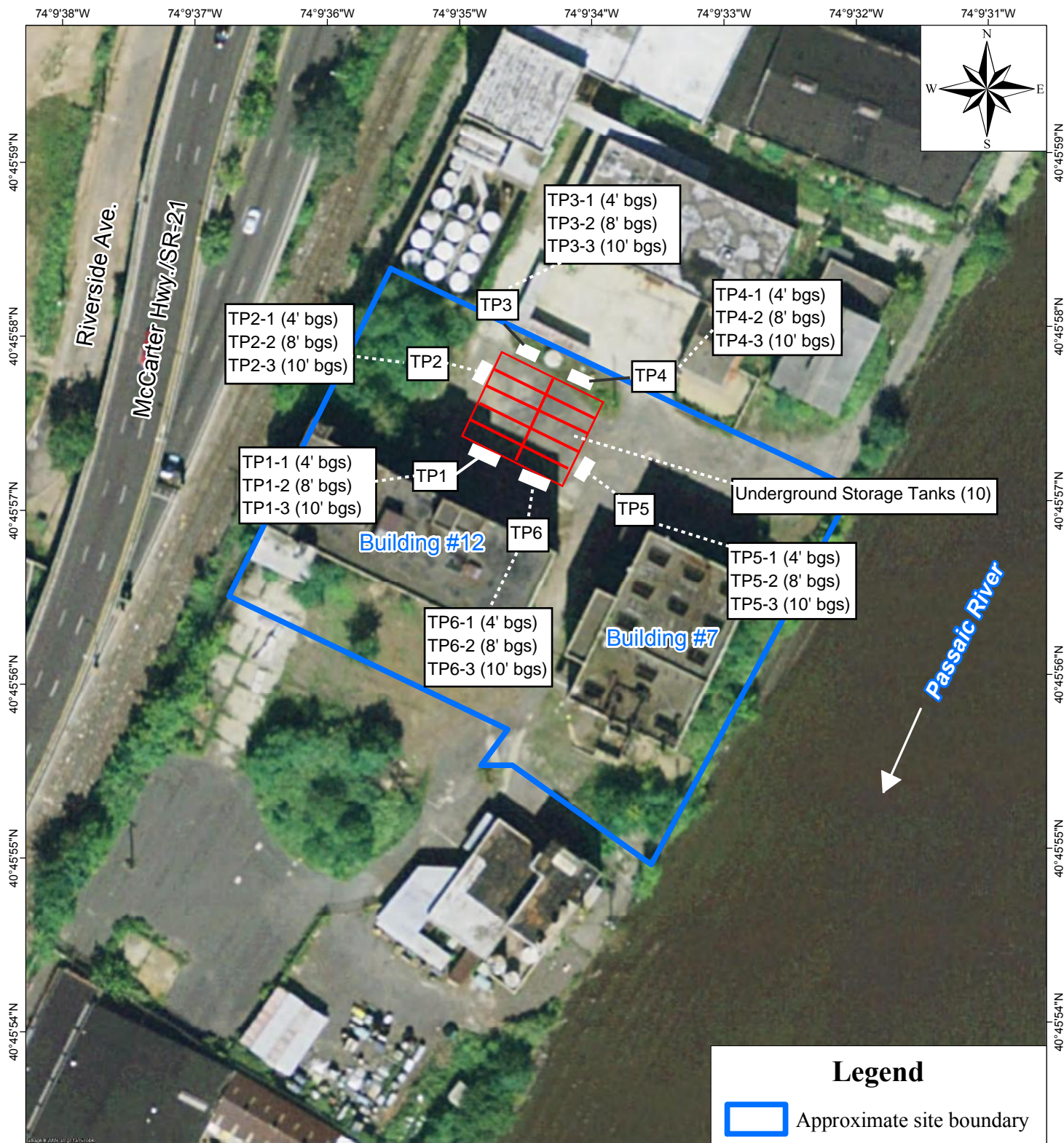
**Figure 3**  
Test Pit Location Map

Project number 9004L100178  
EPA Contract No. EP-S7-06-01

Map created on Feb 1, 2012  
by k. scott, Tetra Tech EM Inc.



**TETRA TECH**



Source: Modified from DigitalGlobe aerial photography, September 19, 2009.

Approximate Site Location = ■



New Jersey

29 Riverside Avenue  
Newark, Essex County, New Jersey

**Figure 4**  
Test Pit Sample Location Map

Project number 9004L100178  
EPA Contract No. EP-S7-06-01

Map created on Feb 1, 2012  
by k. scott, Tetra Tech EM Inc.



## **APPENDIX B**

### **TABLES**

- |          |   |
|----------|---|
| <b>1</b> | <b>Sample Summary</b>                         |
| <b>2</b> | <b>Geographic Coordinates of Test Pits</b>    |
| <b>3</b> | <b>PID Readings from Test Pit Excavations</b> |

TABLE 1  
Riverside Avenue Site  
Test Pit Sampling Summary

Tetra Tech Sample ID	CLP Sample ID	Orientation to UST perimeter	Sampe Depth (ft bgs)	Sampe Date	Sample Time	Matrix	Analysis	Method	Container Type, Volume, (# of Containers)	Preservative	Field QC	Lab QC	Laboratory	CLP Lab Y/N	Date shipped	FedEx Airbill #	COC/TR #	Sample # on TR/COC
TP1-1	B41H2	SW	4	1/25/2012	1100	Soil	TCL VOCs	CLP SOW SOM01.2	Encore® Sampler, 5 gram (3)	4° C	--	--	A4 Scientific	Y	1/25/2012	8645 2662 8793	2-012512-172056-0001	02-p-0001
	Moisture						2 oz. CWM glass jar (1)		1/26/2012						8645 2662 8510	2-012612-132645-0001	02PC-0001	
	TCL SVOCs						8 oz. CWM glass jar (1)											
	TCL Pesticides						8 oz. CWM glass jar (1)											
	TCL Aroclors						8 oz. CWM glass jar (1)											
	Herbicides						SW846 8151A		8 oz. CWM glass jar (1)						1/27/2012	8645 2662 8602	2-012712-084509-0003	
TAL Inorganics	CLP SOW ISM01.3	8 oz. CWM glass jar (1)	ALS Laboratory	Y	1/27/2012	8645 2662 8576	2-012712-085202-0004											
TP1-2	B41H3	SW	8	1/25/2012	1120	Soil	TCL VOCs	CLP SOW SOM01.2	Encore® Sampler, 5 gram (3)	4° C	--	--	A4 Scientific	Y	1/25/2012	8645 2662 8793	2-012512-172056-0001	02-p-0002
	Moisture						2 oz. CWM glass jar (1)		1/26/2012						8645 2662 8510	2-012612-132645-0001	02PC-0002	
	TCL SVOCs						8 oz. CWM glass jar (1)											
	TCL Pesticides						8 oz. CWM glass jar (1)											
	TCL Aroclors						8 oz. CWM glass jar (1)											
	Herbicides						SW846 8151A		8 oz. CWM glass jar (1)						1/27/2012	8645 2662 8602	2-012712-084509-0003	
TAL Inorganics	CLP SOW ISM01.3	8 oz. CWM glass jar (1)	ALS Laboratory	Y	1/27/2012	8645 2662 8576	2-012712-085202-0004											
TP1-3	B41H4	SW	10	1/25/2012	1145	Soil	TCL VOCs	CLP SOW SOM01.2	Encore® Sampler, 5 gram (3)	4° C	--	--	A4 Scientific	Y	1/25/2012	8645 2662 8793	2-012512-172056-0001	02-p-0003
	Moisture						2 oz. CWM glass jar (1)		1/26/2012						8645 2662 8510	2-012612-132645-0001	02PC-0003	
	TCL SVOCs						8 oz. CWM glass jar (1)											
	TCL Pesticides						8 oz. CWM glass jar (1)											
	TCL Aroclors						8 oz. CWM glass jar (1)											
	Herbicides						SW846 8151A		8 oz. CWM glass jar (1)						1/27/2012	8645 2662 8602	2-012712-084509-0003	
TAL Inorganics	CLP SOW ISM01.3	8 oz. CWM glass jar (1)	ALS Laboratory	Y	1/27/2012	8645 2662 8576	2-012712-085202-0004											
TP2-1	B41H5	W	4	1/25/2012	1225	Soil	TCL VOCs	CLP SOW SOM01.2	Encore® Sampler, 5 gram (3)	4° C	--	--	A4 Scientific	Y	1/25/2012	8645 2662 8793	2-012512-172056-0001	02-p-0004
	Moisture						2 oz. CWM glass jar (1)		1/26/2012						8645 2662 8510	2-012612-132645-0001	02PC-0004	
	TCL SVOCs						8 oz. CWM glass jar (1)											
	TCL Pesticides						8 oz. CWM glass jar (1)											
	TCL Aroclors						8 oz. CWM glass jar (1)											
	Herbicides						SW846 8151A		8 oz. CWM glass jar (1)						1/27/2012	8645 2662 8602	2-012712-084509-0003	
TAL Inorganics	CLP SOW ISM01.3	8 oz. CWM glass jar (1)	ALS Laboratory	Y	1/27/2012	8645 2662 8576	2-012712-085202-0004											
TP2-2	B41H6	W	8	1/25/2012	1245	Soil	TCL VOCs	CLP SOW SOM01.2	Encore® Sampler, 5 gram (3)	4° C	--	--	A4 Scientific	Y	1/25/2012	8645 2662 8793	2-012512-172056-0001	02-p-0005
	Moisture						2 oz. CWM glass jar (1)		1/26/2012						8645 2662 8510	2-012612-132645-0001	02PC-0005	
	TCL SVOCs						8 oz. CWM glass jar (1)											
	TCL Pesticides						8 oz. CWM glass jar (1)											
	TCL Aroclors						8 oz. CWM glass jar (1)											
	Herbicides						SW846 8151A		8 oz. CWM glass jar (1)						1/27/2012	8645 2662 8602	2-012712-084509-0003	
TAL Inorganics	CLP SOW ISM01.3	8 oz. CWM glass jar (1)	ALS Laboratory	Y	1/27/2012	8645 2662 8576	2-012712-085202-0004											
TP2-3	B41H7	W	10	1/25/2012	1300	Soil	TCL VOCs	CLP SOW SOM01.2	Encore® Sampler, 5 gram (3)	4° C	--	--	A4 Scientific	Y	1/25/2012	8645 2662 8793	2-012512-172056-0001	02-p-0006
	Moisture						2 oz. CWM glass jar (1)		1/26/2012						8645 2662 8510	2-012612-132645-0001	02PC-0006	
	TCL SVOCs						8 oz. CWM glass jar (1)											
	TCL Pesticides						8 oz. CWM glass jar (1)											
	TCL Aroclors						8 oz. CWM glass jar (1)											
	Herbicides						SW846 8151A		8 oz. CWM glass jar (1)						1/27/2012	8645 2662 8602	2-012712-084509-0003	
TAL Inorganics	CLP SOW ISM01.3	8 oz. CWM glass jar (1)	ALS Laboratory	Y	1/27/2012	8645 2662 8576	2-012712-085202-0004											
TP3-1	B41H8	NW	4	1/25/2012	1500	Soil	TCL VOCs	CLP SOW SOM01.2	Encore® Sampler, 5 gram (3)	4° C	--	--	A4 Scientific	Y	1/25/2012	8645 2662 8793	2-012512-172056-0001	02-p-0007
	Moisture						2 oz. CWM glass jar (1)		1/26/2012						8645 2662 8510	2-012612-132645-0001	02PC-0007	
	TCL SVOCs						8 oz. CWM glass jar (1)											
	TCL Pesticides						8 oz. CWM glass jar (1)											
	TCL Aroclors						8 oz. CWM glass jar (1)											
	Herbicides						SW846 8151A		8 oz. CWM glass jar (1)						1/27/2012	8645 2662 8602	2-012712-084509-0003	
TAL Inorganics	CLP SOW ISM01.3	8 oz. CWM glass jar (1)	ALS Laboratory	Y	1/27/2012	8645 2662 8576	2-012712-085202-0004											

TABLE 1  
Riverside Avenue Site  
Test Pit Sampling Summary

Tetra Tech Sample ID	CLP Sample ID	Orientation to UST perimeter	Sampe Depth (ft bgs)	Sampe Date	Sample Time	Matrix	Analysis	Method	Container Type, Volume, (# of Containers)	Preservative	Field QC	Lab QC	Laboratory	CLP Lab Y/N	Date shipped	FedEx Airbill #	COC/TR #	Sample # on TR/COC									
TP3-2	B41H9	NW	8	1/25/2012	1515	Soil	TCL VOCs	CLP SOW SOM01.2	Encore® Sampler, 5 gram (3)	4° C	--	--	A4 Scientific	Y	1/25/2012	8645 2662 8793	2-012512-172056-0001	02-p-0008									
	Moisture						2 oz. CWM glass jar (1)																				
	TCL SVOCs						8 oz. CWM glass jar (1)		1/26/2012						8645 2662 8510	2-012612-132645-0001	02PC-0008										
	TCL Pesticides						8 oz. CWM glass jar (1)																				
	TCL Aroclors						8 oz. CWM glass jar (1)																				
	Herbicides						SW846 8151A	8 oz. CWM glass jar (1)	1/27/2012				8645 2662 8602	2-012712-084509-0003													
	TAL Inorganics						CLP SOW ISM01.3	8 oz. CWM glass jar (1)	1/27/2012				8645 2662 8576	2-012712-085202-0004													
	Dioxins/Furans						SW846 8290A	8 oz. CWM glass jar (1)	Lancaster Laboratories				N	1/27/2012	8645 2662 8565	300804	TP3-2										
	Moisture							2 oz. CWM glass jar (1)																			
TP3-3	B41H10	NW	10	1/25/2012	1530	Soil	TCL VOCs	CLP SOW SOM01.2	Encore® Sampler, 5 gram (3)	4° C	--	--	A4 Scientific	Y	1/25/2012	8645 2662 8793	2-012512-172056-0001	02-p-0009									
	Moisture						2 oz. CWM glass jar (1)																				
	TCL SVOCs						8 oz. CWM glass jar (1)		1/26/2012						8645 2662 8510	2-012612-132645-0001	02PC-0009										
	TCL Pesticides						8 oz. CWM glass jar (1)																				
	TCL Aroclors						8 oz. CWM glass jar (1)																				
	Herbicides						SW846 8151A	8 oz. CWM glass jar (1)	1/27/2012				8645 2662 8602	2-012712-084509-0003													
	TAL Inorganics						CLP SOW ISM01.3	8 oz. CWM glass jar (1)	1/27/2012				8645 2662 8576	2-012712-085202-0004													
	TP4-1						BA0AA9	NE	4				1/26/2012	915	Soil	TCL VOCs	CLP SOW SOM01.2	Encore® Sampler, 5 gram (3)	4° C	--	--	A4 Scientific	Y	1/26/2012	8645 2662 8510	2-012712-084509-0003	02PC-0010
							Moisture									2 oz. CWM glass jar (1)											
TCL SVOCs		8 oz. CWM glass jar (1)																									
TCL Pesticides		8 oz. CWM glass jar (1)																									
TCL Aroclors		8 oz. CWM glass jar (1)																									
Herbicides		SW846 8151A	8 oz. CWM glass jar (1)	1/27/2012	8645 2662 8602																						
TAL Inorganics		CLP SOW ISM01.3	8 oz. CWM glass jar (1)	1/27/2012	8645 2662 8576	2-012712-085202-0004																					
TP4-2	B0AB0	NE	8	1/26/2012	930	Soil	TCL VOCs	CLP SOW SOM01.2	Encore® Sampler, 5 gram (3)	4° C	--	--	A4 Scientific	Y	1/26/2012	8645 2662 8510	2-012712-084509-0003	02PC-0011									
	Moisture						2 oz. CWM glass jar (1)																				
	TCL SVOCs						8 oz. CWM glass jar (1)																				
	TCL Pesticides						8 oz. CWM glass jar (1)																				
	TCL Aroclors						8 oz. CWM glass jar (1)																				
	Herbicides						SW846 8151A	8 oz. CWM glass jar (1)	1/27/2012				8645 2662 8602														
	TAL Inorganics						CLP SOW ISM01.3	8 oz. CWM glass jar (1)	1/27/2012				8645 2662 8576	2-012712-085202-0004													
TP4-3	B0AB1	NE	10	1/26/2012	945	Soil	TCL VOCs	CLP SOW SOM01.2	Encore® Sampler, 5 gram (3)	4° C	--	--	A4 Scientific	Y	1/26/2012	8645 2662 8510	2-012712-084509-0003	02PC-0012									
	Moisture						2 oz. CWM glass jar (1)																				
	TCL SVOCs						8 oz. CWM glass jar (1)																				
	TCL Pesticides						8 oz. CWM glass jar (1)																				
	TCL Aroclors						8 oz. CWM glass jar (1)																				
	Herbicides						SW846 8151A	8 oz. CWM glass jar (1)	1/27/2012				8645 2662 8602														
	TAL Inorganics						CLP SOW ISM01.3	8 oz. CWM glass jar (1)	1/27/2012				8645 2662 8576	2-012712-085202-0004													
TP5-1	B0AB2	E	4	1/26/2012	1020	Soil	TCL VOCs	CLP SOW SOM01.2	Encore® Sampler, 5 gram (3)	4° C	--	--	A4 Scientific	Y	1/26/2012	8645 2662 8510	2-012712-084509-0003	02PC-0013									
	Moisture						2 oz. CWM glass jar (1)																				
	TCL SVOCs						8 oz. CWM glass jar (1)																				
	TCL Pesticides						8 oz. CWM glass jar (1)																				
	TCL Aroclors						8 oz. CWM glass jar (1)																				
	Herbicides						SW846 8151A	8 oz. CWM glass jar (1)	1/27/2012				8645 2662 8602														
	TAL Inorganics						CLP SOW ISM01.3	8 oz. CWM glass jar (1)	1/27/2012				8645 2662 8576	2-012712-085202-0004													
TP5-2	B0AB3	E	8	1/26/2012	1030	Soil	TCL VOCs	CLP SOW SOM01.2	Encore® Sampler, 5 gram (3)	4° C	--	--	A4 Scientific	Y	1/26/2012	8645 2662 8510	2-012712-084509-0003	02PC-0014									
	Moisture						2 oz. CWM glass jar (1)																				
	TCL SVOCs						8 oz. CWM glass jar (1)																				
	TCL Pesticides						8 oz. CWM glass jar (1)																				
	TCL Aroclors						8 oz. CWM glass jar (1)																				
	Herbicides						SW846 8151A	8 oz. CWM glass jar (1)	1/27/2012				8645 2662 8602														
	TAL Inorganics						CLP SOW ISM01.3	8 oz. CWM glass jar (1)	1/27/2012				8645 2662 8576	2-012712-085202-0004													
	Dioxins/Furans						SW846 8290A	8 oz. CWM glass jar (1)	Lancaster Laboratories				N	1/27/2012	8645 2662 8565	300804	TP5-2										
	Moisture							2 oz. CWM glass jar (1)																			

TABLE 1  
Riverside Avenue Site  
Test Pit Sampling Summary

Tetra Tech Sample ID	CLP Sample ID	Orientation to UST perimeter	Sampe Depth (ft bgs)	Sampe Date	Sample Time	Matrix	Analysis	Method	Container Type, Volume, (# of Containers)	Preservative	Field QC	Lab QC	Laboratory	CLP Lab Y/N	Date shipped	FedEx Airbill #	COC/TR #	Sample # on TR/COC
TP5-3	B0AB4	E	10	1/27/2012	1015	Soil	TCL VOCs	CLP SOW SOM01.2	Encore® Sampler, 5 gram (3)	4° C	--	--	A4 Scientific	Y	1/27/2012	8645 2662 8602	2-012712-084509-0003	02PC-0015
							Moisture		2 oz. CWM glass jar (1)									
							TCL SVOCs		8 oz. CWM glass jar (1)									
							TCL Pesticides		8 oz. CWM glass jar (1)									
							TCL Aroclors		8 oz. CWM glass jar (1)									
							Herbicides	SW846 8151A	8 oz. CWM glass jar (1)									
	MB0AB4						TAL Inorganics	CLP SOW ISM01.3	8 oz. CWM glass jar (1)				ALS Laboratory	Y	1/27/2012	8645 2662 8576	2-012712-085202-0004	
TP6-1	B0AB5	SE	4	1/27/2012	1050	Soil	TCL VOCs	CLP SOW SOM01.2	Encore® Sampler, 5 gram (4)	4° C	field duplicate (TP7-1)	MS/MSD	A4 Scientific	Y	1/27/2012	8645 2662 8602	2-012712-084509-0003	02PC-0016
							Moisture		2 oz. CWM glass jar (1)									
							TCL SVOCs		8 oz. CWM glass jar (2)									
							TCL Pesticides		8 oz. CWM glass jar (2)									
							TCL Aroclors		8 oz. CWM glass jar (2)									
							Herbicides	SW846 8151A	8 oz. CWM glass jar (2)									
	MB0AB5						TAL Inorganics	CLP SOW ISM01.3	8 oz. CWM glass jar (2)				ALS Laboratory	Y	1/27/2012	8645 2662 8576	2-012712-085202-0004	
TP6-2	B0AB6	SE	8	1/27/2012	1145	Soil	TCL VOCs	CLP SOW SOM01.2	Encore® Sampler, 5 gram (3)	4° C	field duplicate (TP7-2)	--	A4 Scientific	Y	1/27/2012	8645 2662 8602	2-012712-084509-0003	02PC-0017
							Moisture		2 oz. CWM glass jar (1)									
							TCL SVOCs		8 oz. CWM glass jar (1)									
							TCL Pesticides		8 oz. CWM glass jar (1)									
							TCL Aroclors		8 oz. CWM glass jar (1)									
							Herbicides	SW846 8151A	8 oz. CWM glass jar (1)									
	MB0AB6						TAL Inorganics	CLP SOW ISM01.3	8 oz. CWM glass jar (1)				ALS Laboratory	Y	1/27/2012	8645 2662 8576	2-012712-085202-0004	
TP6-3	B0AB7	SE	10	1/27/2012	1215	Soil	TCL VOCs	CLP SOW SOM01.2	Encore® Sampler, 5 gram (3)	4° C	--	--	A4 Scientific	Y	1/27/2012	8645 2662 8602	2-012712-084509-0003	02PC-0018
							Moisture		2 oz. CWM glass jar (1)									
							TCL SVOCs		8 oz. CWM glass jar (1)									
							TCL Pesticides		8 oz. CWM glass jar (1)									
							TCL Aroclors		8 oz. CWM glass jar (1)									
							Herbicides	SW846 8151A	8 oz. CWM glass jar (1)									
	MB0AB7						TAL Inorganics	CLP SOW ISM01.3	8 oz. CWM glass jar (1)				ALS Laboratory	Y	1/27/2012	8645 2662 8576	2-012712-085202-0004	
TP7-1	B0AB8	SE	4	1/27/2012	1245 (1050)	Soil	TCL VOCs	CLP SOW SOM01.2	Encore® Sampler, 5 gram (3)	4° C	field duplicate (TP6-1)	--	A4 Scientific	Y	1/27/2012	8645 2662 8602	2-012712-084509-0003	02PC-0019
							Moisture		2 oz. CWM glass jar (1)									
							TCL SVOCs		8 oz. CWM glass jar (1)									
							TCL Pesticides		8 oz. CWM glass jar (1)									
							TCL Aroclors		8 oz. CWM glass jar (1)									
							Herbicides	SW846 8151A	8 oz. CWM glass jar (1)									
	MB0AB8						TAL Inorganics	CLP SOW ISM01.3	8 oz. CWM glass jar (1)				ALS Laboratory	Y	1/27/2012	8645 2662 8576	2-012712-085202-0004	
TP7-2	B0AB9	SE	8	1/27/2012	1300 (1245)	Soil	TCL VOCs	CLP SOW SOM01.2	Encore® Sampler, 5 gram (3)	4° C	field duplicate (TP6-2)	--	A4 Scientific	Y	1/27/2012	8645 2662 8602	2-012712-084509-0003	02PC-0020
							Moisture		2 oz. CWM glass jar (1)									
							TCL SVOCs		8 oz. CWM glass jar (1)									
							TCL Pesticides		8 oz. CWM glass jar (1)									
							TCL Aroclors		8 oz. CWM glass jar (1)									
							Herbicides	SW846 8151A	8 oz. CWM glass jar (1)									
	MB0AB9						TAL Inorganics	CLP SOW ISM01.3	8 oz. CWM glass jar (1)				ALS Laboratory	Y	1/27/2012	8645 2662 8576	2-012712-085202-0004	
	NA						Dioxins/Furans	SW846 8290A	8 oz. CWM glass jar (2)			MS/MSD	Lancaster Laboratories	N	1/27/2012	8645 2662 8565	300804	TP7-2

**Table 2**  
**Geographic Coordinates of Test Pits**  
**Riverside Avenue Site**  
**Newark, NJ**

<b>Test Pit ID</b>	<b>Longitude</b>	<b>Latitude</b>
TP1	40° 45' 57.26" N	74° 09' 35.16 W
TP2	40° 45' 57.58" N	74° 09' 35.08 W
TP3	40° 45' 57.70" N	74° 09' 34.86 W
TP4	40° 45' 57.55" N	74° 09' 34.39 W
TP5	40° 45' 57.10" N	74° 09' 34.51 W
TP6	40° 45' 57.07" N	74° 09' 34.81 W

TABLE 3  
Summary of PID Readings From Test Pit Excavations  
Riverside Avenue Sit  
Newark, NJ

DRAFT

Instrument: MiniRAE 2000 (PGM7600)      Serial Number: 013459  
Data Points: 295      Gas Name: Isobutylene      Sample Period: 60 sec  
Last Calibration Time: 01/20/2012 13:38

Measurement Type:		Min(ppm)	Avg(ppm)	Max(ppm)	
High Alarm Levels:		100	100	100	
Low Alarm Levels:		50	50	50	
=====					
Line#	Date Time	Min(ppm) Alarm	Avg(ppm) Alarm	Max(ppm) Alarm	
					TEST PIT #
	1 1/25/2012 10:58	0	6	42.5	TP1
	2 1/25/2012 10:59	0	4.5	29.3	TP1
	3 1/25/2012 11:00	0	6.2	34.6	TP1
	4 1/25/2012 11:01	0	17.7	115.8 H	TP1
	5 1/25/2012 11:02	0	5.7	18.9	TP1
	6 1/25/2012 11:03	0	3.8	24.5	TP1
	7 1/25/2012 11:04	0	0	0	TP1
	8 1/25/2012 11:05	0	0.8	7.4	TP1
	9 1/25/2012 11:06	0	2	7.5	TP1
	10 1/25/2012 11:07	0	0	0.6	TP1
	11 1/25/2012 11:08	0	0.8	5.5	TP1
	12 1/25/2012 11:09	0	0	0	TP1
	13 1/25/2012 11:10	0	0	0	TP1
	14 1/25/2012 11:11	0	0.2	5.3	TP1
	15 1/25/2012 11:12	0.5	7.2	30.8	TP1
	16 1/25/2012 11:13	0.2	4.6	11.7	TP1
	17 1/25/2012 11:14	0	5.2	18.8	TP1
	18 1/25/2012 11:15	0.6	10.5	53.2 L	TP1
	19 1/25/2012 11:16	0	1.7	10.1	TP1
	20 1/25/2012 11:17	0	0.2	7.3	TP1
	21 1/25/2012 11:18	0	7.8	25.2	TP1
	22 1/25/2012 11:19	0	1.7	4.9	TP1
	23 1/25/2012 11:20	0	0.6	9.1	TP1
	24 1/25/2012 11:21	0	11.7	59.9 L	TP1
	25 1/25/2012 11:22	0	18.2	117.5 H	TP1
	26 1/25/2012 11:23	0	0	0	TP1
	27 1/25/2012 11:24	0	10.2	146 H	TP1
	28 1/25/2012 11:25	0.4	22.2	64.8 L	TP1
	29 1/25/2012 11:26	0	10.6	47.1	TP1
	30 1/25/2012 11:27	0	3.4	22.6	TP1
	31 1/25/2012 11:28	0	4.5	15	TP1
	32 1/25/2012 11:29	0	0	0	TP1
	33 1/25/2012 11:30	0	0.3	6.1	TP1
	34 1/25/2012 11:31	0	0	0.8	TP1
	35 1/25/2012 11:32	0	2.6	10.5	TP1
	36 1/25/2012 11:33	0	0.2	2.5	TP1
	37 1/25/2012 11:34	0	0	1	TP1
	38 1/25/2012 11:35	0	0.3	3.4	TP1
	39 1/25/2012 11:36	0	0.7	5	TP1
	40 1/25/2012 11:37	0	0.4	4.6	TP1
	41 1/25/2012 11:38	0	1.5	21.2	TP1
	42 1/25/2012 11:39	0	0.1	2.1	TP1
	43 1/25/2012 11:40	0	3.7	19.4	TP1
	44 1/25/2012 11:41	0	0	1.5	TP1
	45 1/25/2012 11:42	0	0	0	TP1
	46 1/25/2012 11:43	0	0	0	TP1
	47 1/25/2012 11:44	0	0	0	TP1
	48 1/25/2012 11:45	0	7.9	48.5	TP1
	49 1/25/2012 11:46	0	1.5	15.3	TP1
	50 1/25/2012 11:47	0	0	0.3	TP1
	51 1/25/2012 11:48	0	0.8	7.2	TP1
	52 1/25/2012 11:49	0	0.8	6.7	TP1
	53 1/25/2012 11:50	0	1.5	6.6	TP1
	54 1/25/2012 11:51	0	3	12.5	TP1

TABLE 3  
Summary of PID Readings From Test Pit Excavations  
Riverside Avenue Sit  
Newark, NJ

DRAFT

Instrument: MiniRAE 2000 (PGM7600)      Serial Number: 013459  
Data Points: 295      Gas Name: Isobutylene      Sample Period: 60 sec  
Last Calibration Time: 01/20/2012 13:38

Measurement Type:		Min(ppm)	Avg(ppm)	Max(ppm)	
High Alarm Levels:		100	100	100	
Low Alarm Levels:		50	50	50	
=====					
Line#	Date Time	Min(ppm) Alarm	Avg(ppm) Alarm	Max(ppm) Alarm	
					TEST PIT #
	55 1/25/2012 11:52	0	0	0	TP1
	56 1/25/2012 11:53	0	1.7	18.8	TP1
	57 1/25/2012 11:54	0	0	0	TP1
	58 1/25/2012 11:55	0	0.4	6	TP1
	59 1/25/2012 11:56	1.3	6.3	16.3	TP1
	60 1/25/2012 11:57	1.2	5.4	14.8	TP1
	61 1/25/2012 11:58	0	4.5	15.4	TP1
	62 1/25/2012 11:59	0	1.4	8.1	TP1
	63 1/25/2012 12:00	0	1.5	6.8	TP1
	64 1/25/2012 12:01	0	7.6	19.4	TP1
	65 1/25/2012 12:02	0.4	11.5	43.6	TP1
	66 1/25/2012 12:03	0	7.5	53 L	TP1
	67 1/25/2012 12:04	2.5	19.7	138.8 H	TP1
	68 1/25/2012 12:05	3.4	11.1	33.3	TP1
	69 1/25/2012 12:06	0	9.6	35.3	TP1
	70 1/25/2012 12:07	0	2.7	9	TP1
	71 1/25/2012 12:08	0	3.7	13.4	TP1
	72 1/25/2012 12:09	0	0.2	3	TP1
	73 1/25/2012 12:10	0	2.6	15.1	TP1
	74 1/25/2012 12:11	0	2.7	15.5	TP1
	75 1/25/2012 12:12	0	0.2	2.1	TP1
	76 1/25/2012 12:13	0	0	0.3	TP1
	77 1/25/2012 12:14	0	0	0	TP1
	78 1/25/2012 12:15	0	4	12.2	TP1
AVERAGE READING TP1			3.8		
MAXIMUM READING TP1				146	
	79 1/25/2012 12:16	0	1.2	10.4	TP2
	80 1/25/2012 12:17	0	0.5	9.5	TP2
	81 1/25/2012 12:18	0	0	0	TP2
	82 1/25/2012 12:19	0	0	0	TP2
	83 1/25/2012 12:20	0	18.9	130.3 H	TP2
	84 1/25/2012 12:21	0	1.3	20	TP2
	85 1/25/2012 12:22	0	0.3	5.5	TP2
	86 1/25/2012 12:23	0	18.9	89.8 L	TP2
	87 1/25/2012 12:24	0	0.1	2.8	TP2
	88 1/25/2012 12:25	0	0.2	2.8	TP2
	89 1/25/2012 12:26	0	0	1.6	TP2
	90 1/25/2012 12:27	0	1	10.2	TP2
	91 1/25/2012 12:28	0	0	0	TP2
	92 1/25/2012 12:29	0	0.2	5.7	TP2
	93 1/25/2012 12:30	0	0	2.2	TP2
	94 1/25/2012 12:31	0	0	0	TP2
	95 1/25/2012 12:32	0	0	0.3	TP2
	96 1/25/2012 12:33	0	0	0	TP2
	97 1/25/2012 12:34	0	0	0	TP2
	98 1/25/2012 12:35	0	0	0	TP2
	99 1/25/2012 12:36	0	0	0	TP2
	100 1/25/2012 12:37	0	0	0	TP2
	101 1/25/2012 12:38	0	0	0	TP2
	102 1/25/2012 12:39	0	0	0.8	TP2
	103 1/25/2012 12:40	0	2.1	29.6	TP2
	104 1/25/2012 12:41	0	39.4	190.5 H	TP2
	105 1/25/2012 12:42	0	0.4	6	TP2
	106 1/25/2012 12:43	0	1.8	15.6	TP2

TABLE 3  
Summary of PID Readings From Test Pit Excavations  
Riverside Avenue Sit  
Newark, NJ

DRAFT

Instrument: MiniRAE 2000 (PGM7600)      Serial Number: 013459  
Data Points: 295      Gas Name: Isobutylene      Sample Period: 60 sec  
Last Calibration Time: 01/20/2012 13:38

Measurement Type:		Min(ppm)	Avg(ppm)	Max(ppm)	
High Alarm Levels:		100	100	100	
Low Alarm Levels:		50	50	50	
=====					
Line#	Date Time	Min(ppm) Alarm	Avg(ppm) Alarm	Max(ppm) Alarm	
=====					TEST PIT #
	107 1/25/2012 12:44	0	0	2.2	TP2
	108 1/25/2012 12:45	0	0.6	6.6	TP2
	109 1/25/2012 12:46	0	0.1	3.7	TP2
	110 1/25/2012 12:47	0	0.1	4.7	TP2
	111 1/25/2012 12:48	0	0	0	TP2
	112 1/25/2012 12:49	0	0	0	TP2
	113 1/25/2012 12:50	0	0	0	TP2
	114 1/25/2012 12:51	0	0	0	TP2
	115 1/25/2012 12:52	0	0	0	TP2
	116 1/25/2012 12:53	0	46.7	172.7 H	TP2
	117 1/25/2012 12:54	0.2	2.9	10.1	TP2
	118 1/25/2012 12:55	0	1.7	7.5	TP2
	119 1/25/2012 12:56	0	4.1	24.2	TP2
	120 1/25/2012 12:57	1.1	11.5	23.2	TP2
	121 1/25/2012 12:58	0	3.7	16.8	TP2
	122 1/25/2012 12:59	0	0	0	TP2
	123 1/25/2012 13:00	0	0	0	TP2
	124 1/25/2012 13:01	0	0	0	TP2
	125 1/25/2012 13:02	0	0	0	TP2
	126 1/25/2012 13:03	0	0.1	2.8	TP2
	127 1/25/2012 13:04	0	0.1	4.3	TP2
	128 1/25/2012 13:05	0	0.8	8.7	TP2
	129 1/25/2012 13:06	0	0	2.6	TP2
	130 1/25/2012 13:07	0	0	1.6	TP2
	131 1/25/2012 13:08	0	0	0.4	TP2
	132 1/25/2012 13:09	0	0	0	TP2
	133 1/25/2012 13:10	0	0	0	TP2
	134 1/25/2012 13:11	0	0	0	TP2
	135 1/25/2012 13:12	0	0	0.2	TP2
	136 1/25/2012 13:13	0	0	0.3	TP2
	137 1/25/2012 13:14	0	3.2	17.1	TP2
AVERAGE READING TP2			3.3		
MAXIMUM READING TP2				190.5	
	1 1/25/2012 14:48	0	0	0	TP3
	2 1/25/2012 14:49	0	0	0	TP3
	3 1/25/2012 14:50	0	0	0	TP3
	4 1/25/2012 14:51	0	0	0	TP3
	5 1/25/2012 14:52	0	0	0	TP3
	6 1/25/2012 14:53	0	0	0	TP3
	7 1/25/2012 14:54	0	0	0	TP3
	8 1/25/2012 14:55	0	0	0	TP3
	9 1/25/2012 14:56	0	0	0	TP3
	10 1/25/2012 14:57	0	0.7	10	TP3
	11 1/25/2012 14:58	0	0	0	TP3
	12 1/25/2012 14:59	0	11.3	115.5 H	TP3
	13 1/25/2012 15:00	1	27.5	159.5 H	TP3
	14 1/25/2012 15:01	0	0.3	10.7	TP3
	15 1/25/2012 15:02	0	4	27.9	TP3
	16 1/25/2012 15:03	0	8	25.5	TP3
	17 1/25/2012 15:04	0	7.3	16.2	TP3
	18 1/25/2012 15:05	0	2.4	12.8	TP3
	19 1/25/2012 15:06	0	0.4	7.8	TP3
	20 1/25/2012 15:07	0	0.2	3.6	TP3
	21 1/25/2012 15:08	0	0.3	2.2	TP3

TABLE 3  
Summary of PID Readings From Test Pit Excavations  
Riverside Avenue Sit  
Newark, NJ

DRAFT

Instrument: MiniRAE 2000 (PGM7600)      Serial Number: 013459  
Data Points: 295      Gas Name: Isobutylene      Sample Period: 60 sec  
Last Calibration Time: 01/20/2012 13:38

Measurement Type:		Min(ppm)	Avg(ppm)	Max(ppm)	
High Alarm Levels:		100	100	100	
Low Alarm Levels:		50	50	50	
=====					
Line#	Date Time	Min(ppm) Alarm	Avg(ppm) Alarm	Max(ppm) Alarm	
=====					TEST PIT #
	22 1/25/2012 15:09	0	19.7	165.8 H	TP3
	23 1/25/2012 15:10	0	17.7	167.1 H	TP3
	24 1/25/2012 15:11	0	0	0	TP3
	25 1/25/2012 15:12	0	15.3	177.6 H	TP3
	26 1/25/2012 15:13	0	54.7 L	192.5 H	TP3
	27 1/25/2012 15:14	0	0.2	4.5	TP3
	28 1/25/2012 15:15	0	0	1.9	TP3
	29 1/25/2012 15:16	0	0	0	TP3
	30 1/25/2012 15:17	0	0.1	2.7	TP3
	31 1/25/2012 15:18	0	0	0	TP3
	32 1/25/2012 15:19	0	0	0	TP3
	33 1/25/2012 15:20	0	0	0.9	TP3
	34 1/25/2012 15:21	0	0.1	2.4	TP3
	35 1/25/2012 15:22	0	2	10.8	TP3
	36 1/25/2012 15:23	0	0.2	6.9	TP3
	37 1/25/2012 15:24	0	10.2	42.9	TP3
	38 1/25/2012 15:25	0	3.6	42.1	TP3
	39 1/25/2012 15:26	0	0	0	TP3
	40 1/25/2012 15:27	0	0	0	TP3
	41 1/25/2012 15:28	0	0	0.9	TP3
	42 1/25/2012 15:29	0	0	0	TP3
	43 1/25/2012 15:30	0	0	0	TP3
	44 1/25/2012 15:31	0	0	0	TP3
	45 1/25/2012 15:32	0	0.9	13.9	TP3
	46 1/25/2012 15:33	0	4.1	13.7	TP3
	47 1/25/2012 15:34	0	0	0	TP3
	48 1/25/2012 15:35	0	0	0	TP3
	49 1/25/2012 15:36	0	0.2	1.6	TP3
	50 1/25/2012 15:37	0	0.8	4.4	TP3
	51 1/25/2012 15:38	0	0.7	6	TP3
	52 1/25/2012 15:39	0	0	0	TP3
	53 1/25/2012 15:40	0	0	0	TP3
	54 1/25/2012 15:41	0	0	0	TP3
	55 1/25/2012 15:42	0	0	0	TP3
	56 1/25/2012 15:43	0	0	0	TP3
	57 1/25/2012 15:44	0	0	0	TP3
	58 1/25/2012 15:45	0	0	0	TP3
	59 1/25/2012 15:46	0	0	0	TP3
AVERAGE READING TP3			2.7		
MAXIMUM READING TP3				192.5	
	1 1/26/2012 8:49	0	0	0	TP4
	2 1/26/2012 8:50	0	0	0	TP4
	3 1/26/2012 8:51	0	0	0	TP4
	4 1/26/2012 8:52	0	0	0	TP4
	5 1/26/2012 8:53	0	0	0	TP4
	6 1/26/2012 8:54	0	0	0	TP4
	7 1/26/2012 8:55	0	0	0	TP4
	8 1/26/2012 8:56	0	0	0	TP4
	9 1/26/2012 8:57	0	0	0	TP4
	10 1/26/2012 8:58	0	0	0	TP4
	11 1/26/2012 8:59	0	0	0	TP4
	12 1/26/2012 9:00	0	0	0	TP4
	13 1/26/2012 9:01	0	0	0	TP4
	14 1/26/2012 9:02	0	0	0	TP4

TABLE 3  
Summary of PID Readings From Test Pit Excavations  
Riverside Avenue Sit  
Newark, NJ

DRAFT

Instrument: MiniRAE 2000 (PGM7600)      Serial Number: 013459  
Data Points: 295      Gas Name: Isobutylene      Sample Period: 60 sec  
Last Calibration Time: 01/20/2012 13:38

Measurement Type:		Min(ppm)	Avg(ppm)	Max(ppm)	
High Alarm Levels:		100	100	100	
Low Alarm Levels:		50	50	50	
Line#	Date Time	Min(ppm) Alarm	Avg(ppm) Alarm	Max(ppm) Alarm	
				TEST PIT #	
15	1/26/2012 9:03	0	0	0	TP4
16	1/26/2012 9:04	0	0	0	TP4
17	1/26/2012 9:05	0	0	0	TP4
18	1/26/2012 9:06	0	0	0	TP4
19	1/26/2012 9:07	0	0	0	TP4
20	1/26/2012 9:08	0	0	0	TP4
21	1/26/2012 9:09	0	0	0	TP4
22	1/26/2012 9:10	0	0	0	TP4
23	1/26/2012 9:11	0	27.4	109 H	TP4
24	1/26/2012 9:12	0	17.2	129.8 H	TP4
25	1/26/2012 9:13	0	0	0	TP4
26	1/26/2012 9:14	0	0	0	TP4
27	1/26/2012 9:15	0	0	0	TP4
28	1/26/2012 9:16	0	0	0	TP4
29	1/26/2012 9:17	0	0	0	TP4
30	1/26/2012 9:18	0	0	0	TP4
31	1/26/2012 9:19	0	0	0	TP4
32	1/26/2012 9:20	0	0	2.2	TP4
33	1/26/2012 9:21	0	16.4	153.5 H	TP4
34	1/26/2012 9:22	0	3.3	75.9 L	TP4
35	1/26/2012 9:23	0	2.3	21.4	TP4
36	1/26/2012 9:24	0	0	0	TP4
37	1/26/2012 9:25	0	0	0	TP4
38	1/26/2012 9:26	0	0	0	TP4
39	1/26/2012 9:27	0	0	0	TP4
40	1/26/2012 9:28	0	0	0	TP4
41	1/26/2012 9:29	0	0	0	TP4
42	1/26/2012 9:30	0	0	0	TP4
43	1/26/2012 9:31	0	0	0	TP4
44	1/26/2012 9:32	0	0	0	TP4
45	1/26/2012 9:33	0	0.2	2.1	TP4
46	1/26/2012 9:34	0	0	0	TP4
47	1/26/2012 9:35	0	0	0	TP4
48	1/26/2012 9:36	0	0	0	TP4
49	1/26/2012 9:37	0	0	0	TP4
50	1/26/2012 9:38	0	0.1	2	TP4
51	1/26/2012 9:39	0	16.8	37.6	TP4
52	1/26/2012 9:40	10.1	21	50.1 L	TP4
53	1/26/2012 9:41	0	4.9	23.1	TP4
54	1/26/2012 9:42	0	0	0	TP4
55	1/26/2012 9:43	0	0	0	TP4
56	1/26/2012 9:44	0	0	0	TP4
57	1/26/2012 9:45	0	0	0	TP4
58	1/26/2012 9:46	0	0	0	TP4
59	1/26/2012 9:47	0	0	0	TP4
60	1/26/2012 9:48	0	0	0	TP4
61	1/26/2012 9:49	0	0	0	TP4
62	1/26/2012 9:50	0	0	0	TP4
63	1/26/2012 9:51	0	0	0	TP4
64	1/26/2012 9:52	0	0	0	TP4
65	1/26/2012 9:53	0	0	0	TP4
66	1/26/2012 9:54	0	0	0	TP4
67	1/26/2012 9:55	0	0	0	TP4
68	1/26/2012 9:56	0	0	0	TP4

TABLE 3  
Summary of PID Readings From Test Pit Excavations  
Riverside Avenue Sit  
Newark, NJ

DRAFT

Instrument: MiniRAE 2000 (PGM7600)      Serial Number: 013459  
Data Points: 295      Gas Name: Isobutylene      Sample Period: 60 sec  
Last Calibration Time: 01/20/2012 13:38

Measurement Type:		Min(ppm)	Avg(ppm)	Max(ppm)	
High Alarm Levels:		100	100	100	
Low Alarm Levels:		50	50	50	
=====					
Line#	Date	Time	Min(ppm)	Alarm	Avg(ppm)
					Alarm
					Max(ppm)
					Alarm
=====					
					TEST PIT #
	69	1/26/2012 9:57	0		0
	70	1/26/2012 9:58	0		0
	71	1/26/2012 9:59	0		0
	72	1/26/2012 10:00	0		0
	73	1/26/2012 10:01	0		0
	74	1/26/2012 10:02	0		0
	75	1/26/2012 10:03	0		0
	76	1/26/2012 10:04	0		0
	77	1/26/2012 10:05	0		0
	78	1/26/2012 10:06	0		0
	79	1/26/2012 10:07	0		0
	80	1/26/2012 10:08	0		0
	81	1/26/2012 10:09	0		0
AVERAGE READING TP4			1.4		
MAXIMUM READING TP4			153.5		
	82	1/26/2012 10:10	0		0
	83	1/26/2012 10:11	0		0
	84	1/26/2012 10:12	0		0
	85	1/26/2012 10:13	0		0
	86	1/26/2012 10:14	0		0
	87	1/26/2012 10:15	0		0
	88	1/26/2012 10:16	0		0
	89	1/26/2012 10:17	0		0
	90	1/26/2012 10:18	0		17
	91	1/26/2012 10:19	0		39.8
	92	1/26/2012 10:20	0		0
	93	1/26/2012 10:21	0		0
	94	1/26/2012 10:22	0		0.5
	95	1/26/2012 10:23	0		0.5
	96	1/26/2012 10:24	0		0
	97	1/26/2012 10:25	0		0
	98	1/26/2012 10:26	0		0
	99	1/26/2012 10:27	0		0
AVERAGE READING TP5			1.8		
MAXIMUM READING TP5			200.7		

Note: Due to inclement weather on 1/27/12, the PID was not used to screen soil samples collected from test pit TP6.

## **APPENDIX C**

### **PHOTOGRAPHIC DOCUMENTATION LOG**



## ***Photographic Documentation***

**Client:** U.S. EPA Region 2  
**Site Name:** Riverside Avenue  
**Location:** Newark, New Jersey

**Prepared by:** Tetra Tech EM Inc.  
**Photographer:** Kevin Scott, START Region 7  
**EPA Task Order No.:** 9004L100178000

### **Photograph No. 001**

**Photograph Date:** 1/25/12

**Photograph Time:** 10:38

**Orientation:** Facing west

**Description:** Photograph shows ERRS Foreman and Heavy Equipment Operator in vicinity of test pit TP1 location, at southwestern end of UST tank farm perimeter. Building #12 is in background.



### **Photograph No. 002**

**Photograph Date:** 1/25/12

**Photograph Time:** 10:38

**Orientation:** Facing west

**Description:** Photograph shows pooled water in excavated area on Lot 64 in the area of the UST tank farm. One UST is visible in the photograph.





## ***Photographic Documentation***

**Client:** U.S. EPA Region 2  
**Site Name:** Riverside Avenue  
**Location:** Newark, New Jersey

**Prepared by:** Tetra Tech EM Inc.  
**Photographer:** Kevin Scott, START Region 7  
**EPA Task Order No.:** 9004L100178000

**Photograph No. 003**

**Photograph Date:** 1/25/12

**Photograph Time:** 10:56

**Orientation:** West

**Description:** Photograph shows ERRS operator excavating test pit TP1. ERRS Foreman is shown in foreground of photo with a tape measure to measure depth of excavation for sampling interval.



**Photograph No. 004**

**Photograph Date:** 1/25/12

**Photograph Time:** 11:03

**Orientation:** northwest

**Description:** Photograph shows soil in excavator bucket collected from a depth of 4' bgs in test pit TP1.





## ***Photographic Documentation***

**Client:** U.S. EPA Region 2  
**Site Name:** Riverside Avenue  
**Location:** Newark, New Jersey

**Prepared by:** Tetra Tech EM Inc.  
**Photographer:** Kevin Scott, START Region 7  
**EPA Task Order No.:** 9004L100178000

**Photograph No. 005**

**Photograph Date:** 1/25/12

**Photograph Time:** 12:14

**Orientation:** Facing northwest

**Description:** Photograph shows ERRS crew starting to excavate test pit TP2.



**Photograph No. 006**

**Photograph Date:** 1/25/12

**Photograph Time:** 12:16

**Orientation:** Facing southeast

**Description:** Photograph shows START sample staging location outside of the UST tank farm perimeter fence line.





## ***Photographic Documentation***

**Client:** U.S. EPA Region 2  
**Site Name:** Riverside Avenue  
**Location:** Newark, New Jersey

**Prepared by:** Tetra Tech EM Inc.  
**Photographer:** Kevin Scott, START Region 7  
**EPA Task Order No.:** 9004L100178000

**Photograph No. 007**

**Photograph Date:** 1/25/12

**Photograph Time:** 12:18

**Orientation:** North

**Description:** Photograph shows initial excavation of test pit TP2.



**Photograph No. 008**

**Photograph Date:** 1/25/12

**Photograph Time:** 12:18

**Orientation:** Facing east

**Description:** Photograph shows soil in excavator bucket collected from a depth of 4' bgs in test pit TP2.





## **Photographic Documentation**

**Client:** U.S. EPA Region 2  
**Site Name:** Riverside Avenue  
**Location:** Newark, New Jersey

**Prepared by:** Tetra Tech EM Inc.  
**Photographer:** Kevin Scott, START Region 7  
**EPA Task Order No.:** 9004L100178000

**Photograph No. 009**

**Photograph Date:** 1/25/12

**Photograph Time:** 12:22

**Orientation:** Facing west

**Description:** Photographs shows soil sample collected from TP2 and PID used to screen soil samples for volatile organic compounds.



**Photograph No. 010**

**Photograph Date:** 1/25/12

**Photograph Time:** 15:23

**Orientation:** Facing northwest

**Description:** Looking down into test pit TP3. Excavation depth is approximately 8' bgs. Excavation is below water table (approx. 6' bgs). Black oily sheen is also visible in photo, floating on pooled water in excavation.





## ***Photographic Documentation***

**Client:** U.S. EPA Region 2  
**Site Name:** Riverside Avenue  
**Location:** Newark, New Jersey

**Prepared by:** Tetra Tech EM Inc.  
**Photographer:** Kevin Scott, START Region 7  
**EPA Task Order No.:** 9004L100178000

**Photograph No. 011**

**Photograph Date:** 1/26/12

**Photograph Time:** 09:09

**Orientation:** Facing west

**Description:** Photos shows ERRS foreman measuring depth of excavation in test pit TP4.



**Photograph No. 012**

**Photograph Date:** 1/26/12

**Photograph Time:** 10:15

**Orientation:** Facing north/northwest

**Description:** Photograph shows initial exaction of test pit TP5.





## ***Photographic Documentation***

**Client:** U.S. EPA Region 2  
**Site Name:** Riverside Avenue  
**Location:** Newark, New Jersey

**Prepared by:** Tetra Tech EM Inc.  
**Photographer:** Kevin Scott, START Region 7  
**EPA Task Order No.:** 9004L100178000

**Photograph No. 013**

**Photograph Date:** 1/26/12

**Photograph Time:** 10:26

**Orientation:** Facing south

**Description:** Looking down into test pit TP5. Excavation depth is approximately 5' bgs. Black oily sheen is also visible in photo, floating on pooled water in excavation.



**Photograph No. 014**

**Photograph Date:** 1/26/12

**Photograph Time:** 10:26

**Orientation:** Facing south

**Description:** Photograph shows soil in excavator bucket collected from a depth of 8' bgs in test pit TP5.





## ***Photographic Documentation***

**Client:** U.S. EPA Region 2  
**Site Name:** Riverside Avenue  
**Location:** Newark, New Jersey

**Prepared by:** Tetra Tech EM Inc.  
**Photographer:** Kevin Scott, START Region 7  
**EPA Task Order No.:** 9004L100178000

**Photograph No. 015**

**Photograph Date:** 1/26/12

**Photograph Time:** 10:51

**Orientation:** Facing southwest

**Description:** Photograph shows test pit TP5 overflowing with water after 8 inch water main was damaged by the excavator bucket while attempting to excavate to 10' bgs. ERRS personnel quickly constructed an earthen berm and swale to channel water into open pit.



**Photograph No. 016**

**Photograph Date:** 1/26/12

**Photograph Time:** 10:38

**Orientation:** Facing east

**Description:** Photograph shows the 8 inch water main that was damaged in test pit TP5, after the main had been turned off and the water pumped out of the excavation.





---

### ***Photographic Documentation***

**Client:** U.S. EPA Region 2  
**Site Name:** Riverside Avenue  
**Location:** Newark, New Jersey

**Prepared by:** Tetra Tech EM Inc.  
**Photographer:** Kevin Scott, START Region 7  
**EPA Task Order No.:** 9004L100178000

**Photograph No.** 017

**Photograph Date:** 1/27/12

**Photograph Time:** 11:35

**Orientation:** Facing east

**Description:** Photograph of test pit TP6.



## **APPENDIX D**

### **FIELD LOGBOOK NOTES**

K S II

etra och halld

N , E 9 8

R de

R k de

N l J

700

1/24/1

as co ( ) of T

ch(T or h

(are Rental (opt

to the Rental

Vehicle Rental

Project (V) de

to the H

the

Some more ago the

ago the

Karr ' 5th ago

the loads chide

Equipment + pl

needle

mm ng of

to the as

for in the to

the call

the chide

the quest

on 1/1

4/ SC

K. contact

E. Daily (B) region

ho con or adia al ly

purchase + c. ETH.

on site

the

the

the

the

the

the

the

the

the

the

the

the

the

the

the

the

the

the

the

the

the

the

1  
K. I'm older  
+ H  
to  
up  
1

ce  
+ on  
d to  
to

at  
he is  
to

next  
E A man  
+ k p nte

der p nt  
abel

Re  
ched on (charts)

ment  
1  
in

d  
at  
ng

45  
p che sum le tug then

10  
K. I'm  
he  
da  
+ k  
re  
ce

eat  
out  
beg  
r  
ce

BRS sparks ( )

causing  
5

0 KS take p by

or  
one  
long  
n

ado  
F p t turn d

are  
vate  
ab  
kg out

covered  
to a  
IP

12 S A [redacted]

1/1 (cont)

o act 5 le

5 d t

can b

for b a

at backing on lat

try ks ft k 3

1 A amp us n 3

ampers from us de

EX also det

took note at hoto

+ conduct i r

c / m

det. ry

ks to k / amp to

trying ea u T fan

urimeter at the

from cl lens

r the 11 g ality

anometer 58 82

5 (0 2-02) 1 p h

(0 8 gr)

+ herbic

L

2

1/5/1  
Res operator continues

excavating 70

depth of approx 8 below

ground (bgs)

12 coll sample

(and inter analyzed

parameters as T

ks 0 1 u b dt

to det

14

eks para

to excavate

of 2 1 bags

5

ks coll

(5 spore

1/5/1

1/5/1

1/5/1

1/5/1

1/5/1

1/5/1

1/5/1

1/5/1

(cont)

or p to bag

ng

fact

p water lects

mi

182

abs

tes

(true angle contact parameters)

ex string

depth

14

k

black

5 in

e contact aneter

~~att~~ y

p s

tra 2

di n/

analyis

p us

mai re

le,

KS 6  
K-72

river (see me (cont))

is ~~Penh~~ causing T

wer

acts

p

2 3

ntar

erch

afe

p

ex to clay super

app table

up li

tes

ES

date

h

L to

date

collected f

er

HS

n

KS 6  
KS 6  
KS 6

1 -  
 ex ) the farm  
 per  
 p  
 cts  
 le  
 y  
 n - ng  
 the  
 d  
 st p  
 ex  
 ato

( 2  
 area confar and to  
 call  
 her  
 conducted  
 ules  
 a furan  
 percho conf

9  
 feet the  
 the bucke  
 after  
 exan

dates  
 5  
 to

label tag  
 K S

35 cas 3  
 K S

( - )

at 1' cont

at 1' for

ad

1 on hours run

or

1 t

to at

k up

ample

ore to

le

v

π d x

d

d

k

at

v

ced

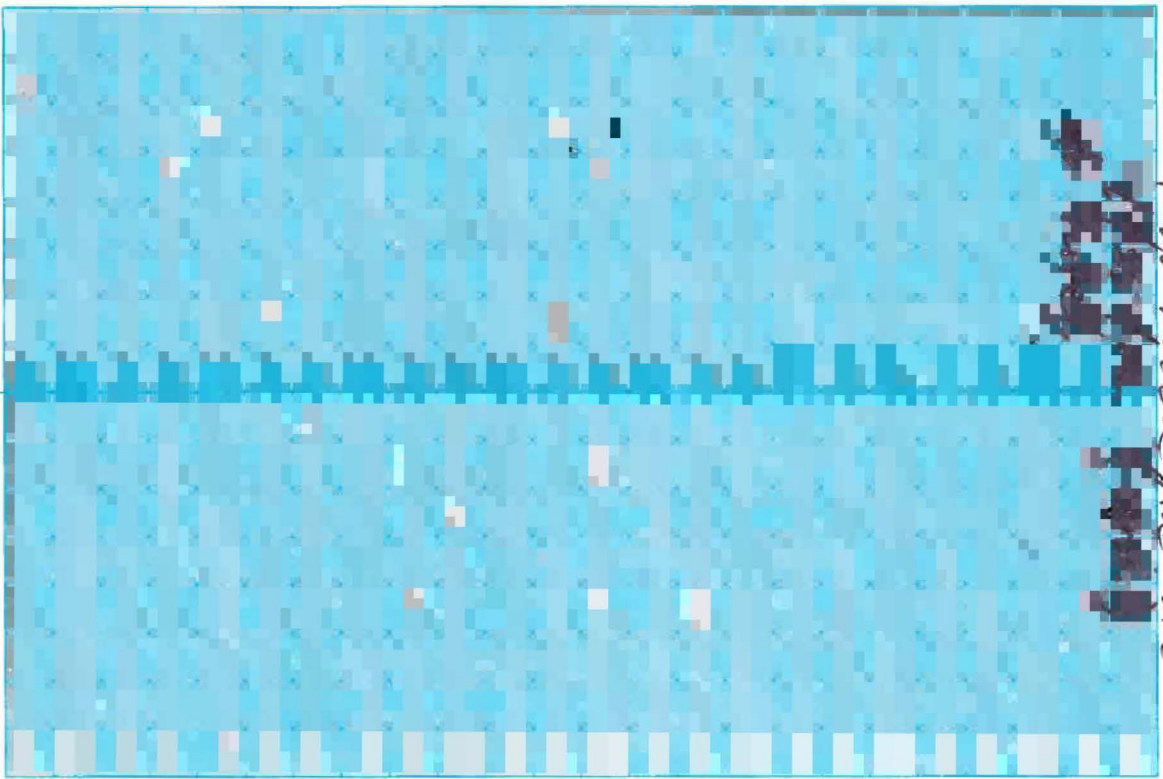
hu

l

d

tu

co



(or  
 1  
 2  
 3  
 4  
 5  
 6  
 7  
 8  
 9  
 10  
 11  
 12  
 13  
 14  
 15  
 16  
 17  
 18  
 19  
 20  
 21  
 22  
 23  
 24  
 25  
 26  
 27  
 28  
 29  
 30  
 31  
 32  
 33  
 34  
 35  
 36  
 37  
 38  
 39  
 40  
 41  
 42  
 43  
 44  
 45  
 46  
 47  
 48  
 49  
 50  
 51  
 52  
 53  
 54  
 55  
 56  
 57  
 58  
 59  
 60  
 61  
 62  
 63  
 64  
 65  
 66  
 67  
 68  
 69  
 70  
 71  
 72  
 73  
 74  
 75  
 76  
 77  
 78  
 79  
 80  
 81  
 82  
 83  
 84  
 85  
 86  
 87  
 88  
 89  
 90  
 91  
 92  
 93  
 94  
 95  
 96  
 97  
 98  
 99  
 100

1  
 2  
 3  
 4  
 5  
 6  
 7  
 8  
 9  
 10  
 11  
 12  
 13  
 14  
 15  
 16  
 17  
 18  
 19  
 20  
 21  
 22  
 23  
 24  
 25  
 26  
 27  
 28  
 29  
 30  
 31  
 32  
 33  
 34  
 35  
 36  
 37  
 38  
 39  
 40  
 41  
 42  
 43  
 44  
 45  
 46  
 47  
 48  
 49  
 50  
 51  
 52  
 53  
 54  
 55  
 56  
 57  
 58  
 59  
 60  
 61  
 62  
 63  
 64  
 65  
 66  
 67  
 68  
 69  
 70  
 71  
 72  
 73  
 74  
 75  
 76  
 77  
 78  
 79  
 80  
 81  
 82  
 83  
 84  
 85  
 86  
 87  
 88  
 89  
 90  
 91  
 92  
 93  
 94  
 95  
 96  
 97  
 98  
 99  
 100

1  
 2  
 3  
 4  
 5  
 6  
 7  
 8  
 9  
 10  
 11  
 12  
 13  
 14  
 15  
 16  
 17  
 18  
 19  
 20  
 21  
 22  
 23  
 24  
 25  
 26  
 27  
 28  
 29  
 30  
 31  
 32  
 33  
 34  
 35  
 36  
 37  
 38  
 39  
 40  
 41  
 42  
 43  
 44  
 45  
 46  
 47  
 48  
 49  
 50  
 51  
 52  
 53  
 54  
 55  
 56  
 57  
 58  
 59  
 60  
 61  
 62  
 63  
 64  
 65  
 66  
 67  
 68  
 69  
 70  
 71  
 72  
 73  
 74  
 75  
 76  
 77  
 78  
 79  
 80  
 81  
 82  
 83  
 84  
 85  
 86  
 87  
 88  
 89  
 90  
 91  
 92  
 93  
 94  
 95  
 96  
 97  
 98  
 99  
 100

and

add

t

only

acts

cal

perl

t

1, 12 (100%)

TP - leads to

from

red

able

has trench + ss in bucket

and man for up

extra continued  
cavate  
lets

at X

to

only

and

in

5

C

8

8

1

glass

1

1

1

1

Her day (cont.)

late 1:20

the measurement  
captu halo (EPLS)

5 / 10 car

5 / 10

Earth or no air

5 / 10

5 / 10

5 / 10

5 / 10

5 / 10

KS

we are

filled with op execution

5 KS per sample

5 / 10

KS update

5 / 10

5 / 10

5 / 10

5 / 10

5 / 10

5 / 10

5 / 10

KS

living  
check  
- (checked out  
(1888 on 10



4. out I  
to (want  
to 5 to

[illegible]

8.15 hrs

the smoke

5-5

12/11/11

1 de 40 Fe  
1 (cats)

03 re pecks beg  
excavating TOS p  
1 p (south east)

f p me  
hy car enter ex

13 pass take p h excav  
activity at - b ban  
under p h

1 ks tests e le  
cavalier e  
location TD, with  
distance 11.8 use  
mple 1 use  
old lab cl

duplicate ) D  
study and p

a type am  
the long, locate  
from the inferred  
Ad search have

de Fe  
127 because field

+ 6 Oct.  
1 ks takes pl to at soil  
excavator - what is located  
at dig 88, 1

1 ks tests 1 le  
le - from dig excavator  
test pit T

(soil) E has 10 one tested  
for this location this 1 cat  
is 11 10 be dup cate  
mple (T - study

cavaliers + mple ban  
types 1 the excavator  
1 cat 1 the excavator  
at the addition of data  
burial analysis the  
location Addition both e  
used - duplicate mple.

11/2/12

## **APPENDIX E**

### **CHAIN-OF-CUSTODY RECORDS**



1. 1000  
 2. 1000  
 3. 1000  
 4. 1000  
 5. 1000  
 6. 1000  
 7. 1000  
 8. 1000  
 9. 1000  
 10. 1000  
 11. 1000  
 12. 1000  
 13. 1000  
 14. 1000  
 15. 1000  
 16. 1000  
 17. 1000  
 18. 1000  
 19. 1000  
 20. 1000  
 21. 1000  
 22. 1000  
 23. 1000  
 24. 1000  
 25. 1000  
 26. 1000  
 27. 1000  
 28. 1000  
 29. 1000  
 30. 1000  
 31. 1000  
 32. 1000  
 33. 1000  
 34. 1000  
 35. 1000  
 36. 1000  
 37. 1000  
 38. 1000  
 39. 1000  
 40. 1000  
 41. 1000  
 42. 1000  
 43. 1000  
 44. 1000  
 45. 1000  
 46. 1000  
 47. 1000  
 48. 1000  
 49. 1000  
 50. 1000  
 51. 1000  
 52. 1000  
 53. 1000  
 54. 1000  
 55. 1000  
 56. 1000  
 57. 1000  
 58. 1000  
 59. 1000  
 60. 1000  
 61. 1000  
 62. 1000  
 63. 1000  
 64. 1000  
 65. 1000  
 66. 1000  
 67. 1000  
 68. 1000  
 69. 1000  
 70. 1000  
 71. 1000  
 72. 1000  
 73. 1000  
 74. 1000  
 75. 1000  
 76. 1000  
 77. 1000  
 78. 1000  
 79. 1000  
 80. 1000  
 81. 1000  
 82. 1000  
 83. 1000  
 84. 1000  
 85. 1000  
 86. 1000  
 87. 1000  
 88. 1000  
 89. 1000  
 90. 1000  
 91. 1000  
 92. 1000  
 93. 1000  
 94. 1000  
 95. 1000  
 96. 1000  
 97. 1000  
 98. 1000  
 99. 1000  
 100. 1000

1

1000

1000

1000

1000

1

1000

1000

1000

1000

1000

1000

1000

1

1000

1









1

1501

[illegible]

C

b t

<p>11-6</p>	<p>MS/MS</p>	<p>[Redacted]</p>
<p>[Redacted]</p>	<p>[Redacted]</p>	<p>[Redacted]</p>
<p>Mc. Hre</p>	<p>[Redacted]</p>	<p>[Redacted]</p>
<p>[Redacted]</p>	<p>[Redacted]</p>	<p>[Redacted]</p>